

ATTACK

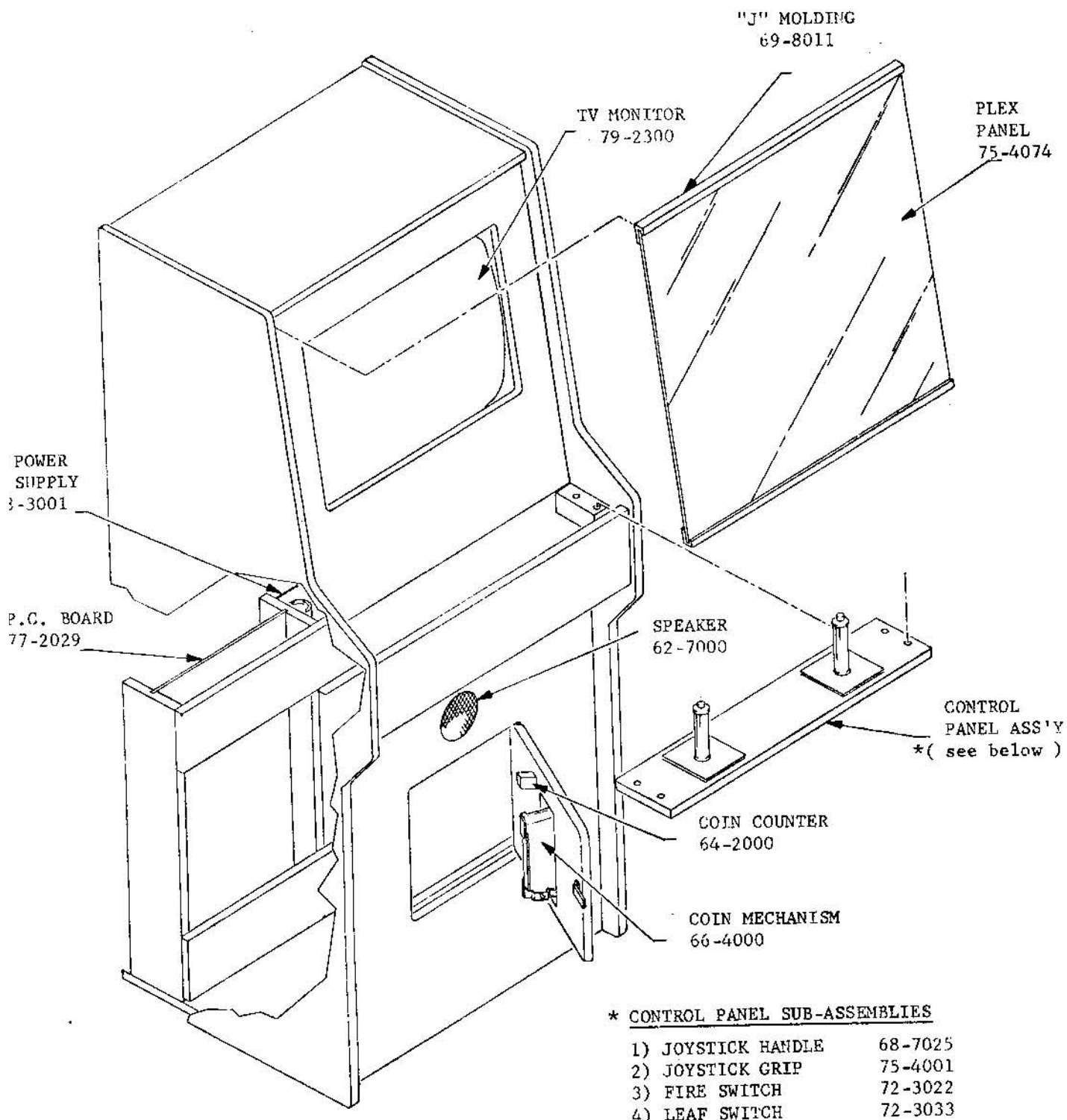
BY *Exidy*

SERVICE MANUAL

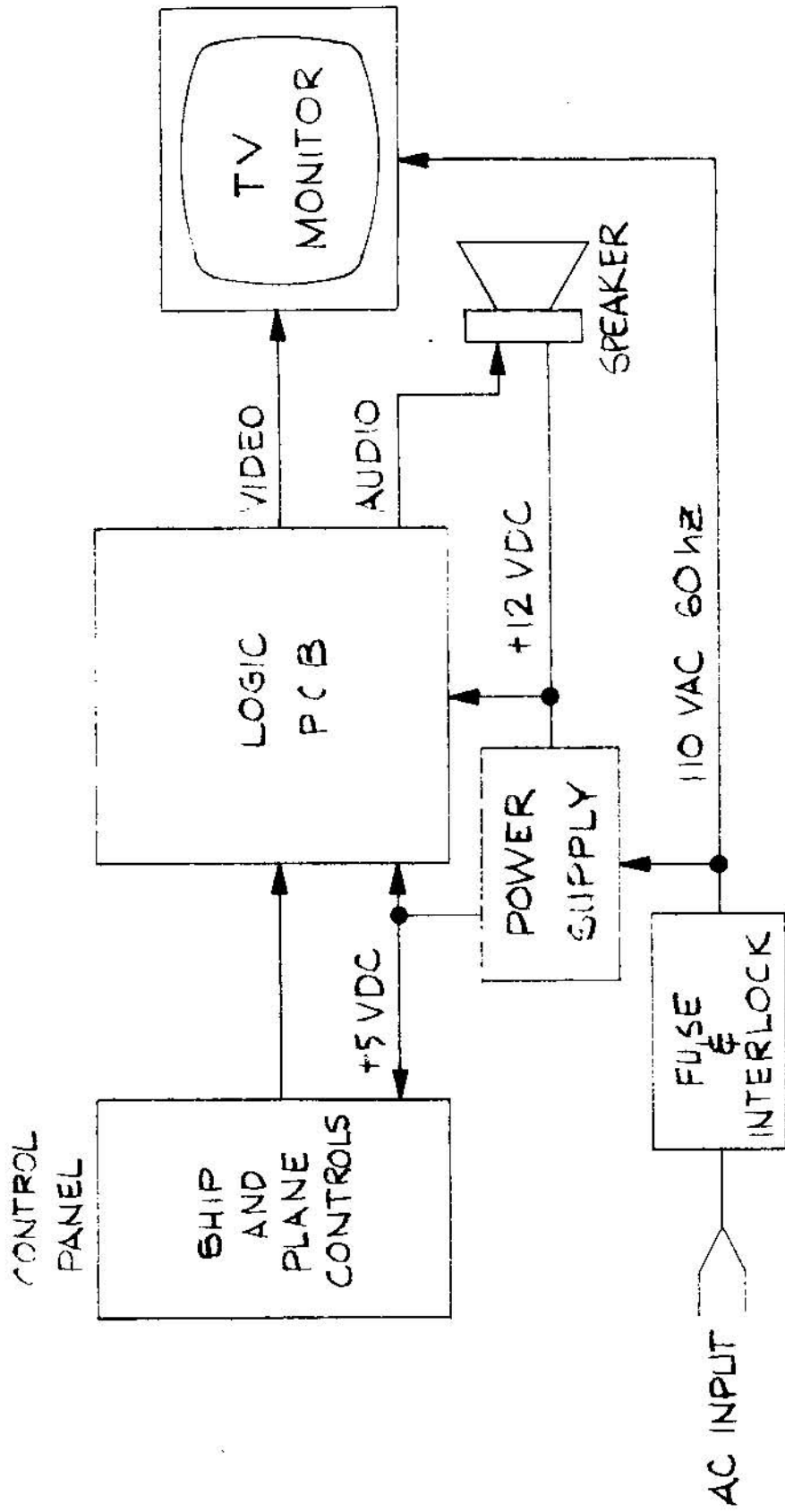
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ATTACK SYSTEM BLOCK DIAGRAM



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I. Adjustments

A. Power Supply Adjustment

Proper operation of this game is absolutely dependent on proper adjustment of the +5vdc power supply.

Before attempting to operate or troubleshoot this game, measure and adjust, as necessary, the +5vdc power supply voltage.

Measure voltage with meter leads contacting +5vdc and ground traces on P.C.B., near the 6 pin connector.

The power supply voltage is set at the factory, but shocks due to shipping and handling may cause this setting to vary.

B. Volume Adjustment

Sound volume is adjustable using the pot on the P.C.B. nearest the 22 pin connector.

C. Game Time Adjustment

Game time (length of game) is adjustable using the pot on the P.C.B. nearest the 6 pin connector.

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Troubleshooting Tips

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Nothing happens	Blown fuse	Replace
	Interlock switch not closing	check switch alignment
Game blows fuses	Bad TV Monitor	Repair or replace
	Bad power supply	Repair or replace
Game has sound but no picture	Bad P.C.B.	Repair or replace
	Bad TV Monitor	Repair or replace
	No +5vdc	Check output of power supply for +5vdc. If not present, replace power supply.
Game has picture but no sound	Bad P.C.B.	Repair or replace
	No +12vdc	Check power supply harness. Wire attached to cap should have +12vdc.
Game does not start with coin	Bad speaker	Replace
	Bad P.C.B.	Repair or replace
All controls completely inoperative	Bad coin mechanism	Check microswitch and mechanism.
	Bad P.C.B.	Repair or replace
Some controls inoperative	Ground wire to control harness open (disconnected)	Repair
	Bad P.C.B.	Repair or replace
Game is erratic. Seems to work OK sometimes, other times not.	Bad leaf switches in control panel	Replace (even if just bent). Once bent, switch is unreliable.
	Low +5vdc power	Adjust power supply. Measure voltage with test leads on P.C.B. (near 6 pin connector).
Game is static sensitive	Bad P.C.B.	Repair or replace
	Carpet	Solder 12" long 22 awg. insulated wire to pin 20 of J2 (P.C.B. 22 pin connector). Leave one end hanging loose, taking care that wire is properly insulated. If game shuts off too easily then, trim the wire shorter as necessary.
	Weather	
	Nearby devices generating high voltages and/or high frequencies.	

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P.C. BOARD CONNECTOR PINOUT

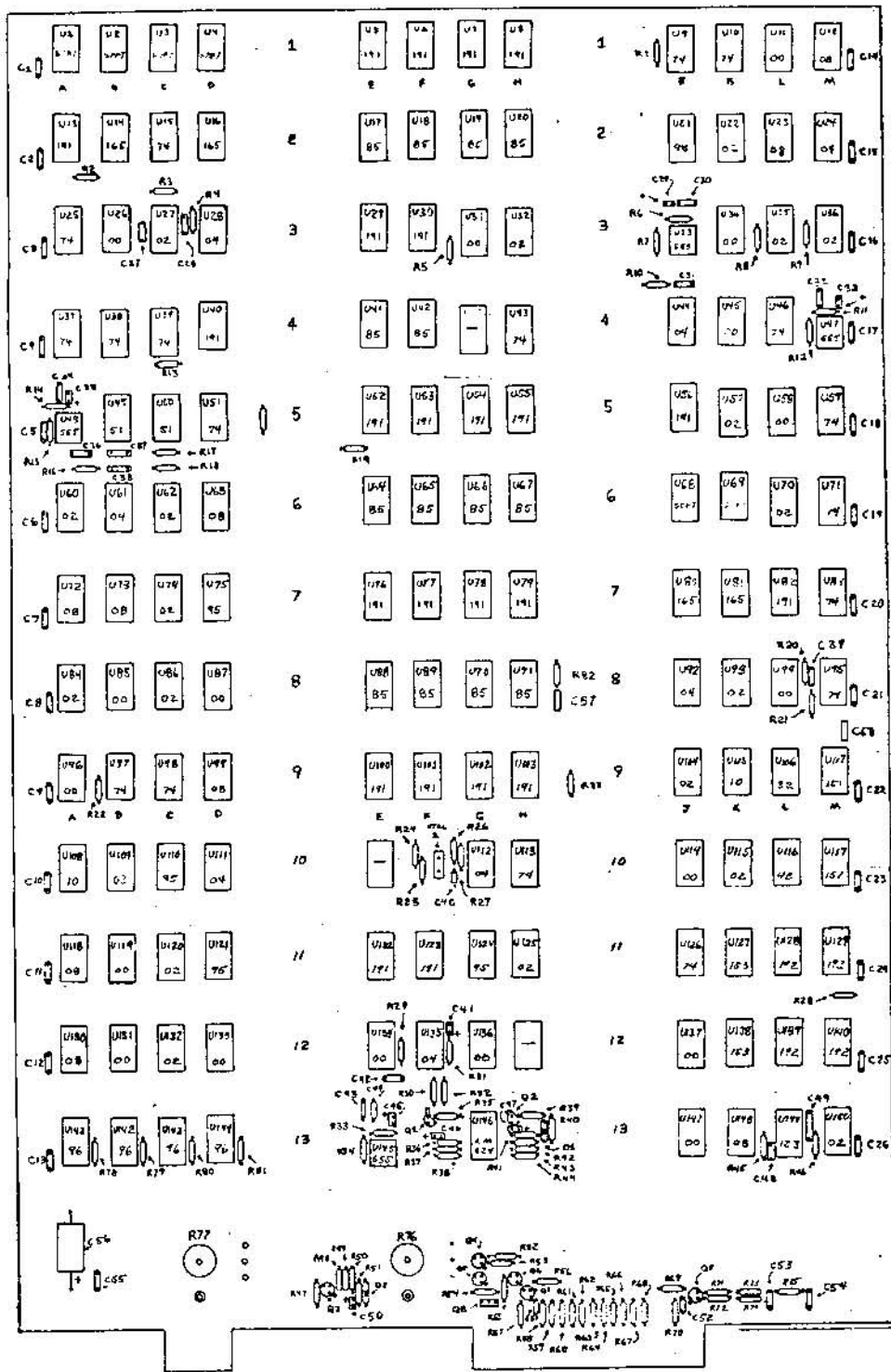
- 1. } GND
- 2. }
- 3. } +5V
- 4. }
- 5. } GND
- 6. }

- 1. +12v (and one side of SPKR)
- 2. SPKR (direct)
- 3. GND
- 4.
- 5.
- 6.
- 7. *SML.....(ship move left)
- 8. *SMR.....(ship move right)
- 9. *SHP GR.....(ship gun right)
- 10. *SHP GL.....(ship gun left)
- 11. *SBF NO.....(ship button fire)
- 12. SBF NC.....(ship button fire)
- 13. *PBF NO.....(plane button fire)
- 14. *PBF NC.....(plane button fire)
- 15. *PLN SPD FST...(plane speed fast)
- 16. *PLN RCCW.....(plane rotate counter-clockwise)
- 17. *PLN RCW.....(plane rotate clockwise)
- 18. COIN.....(coin drop)
- 19. GND
- 20. ANT.....(anti-static antenna)
- 21. VIDEO RETURN
- 22. TV VIDEO

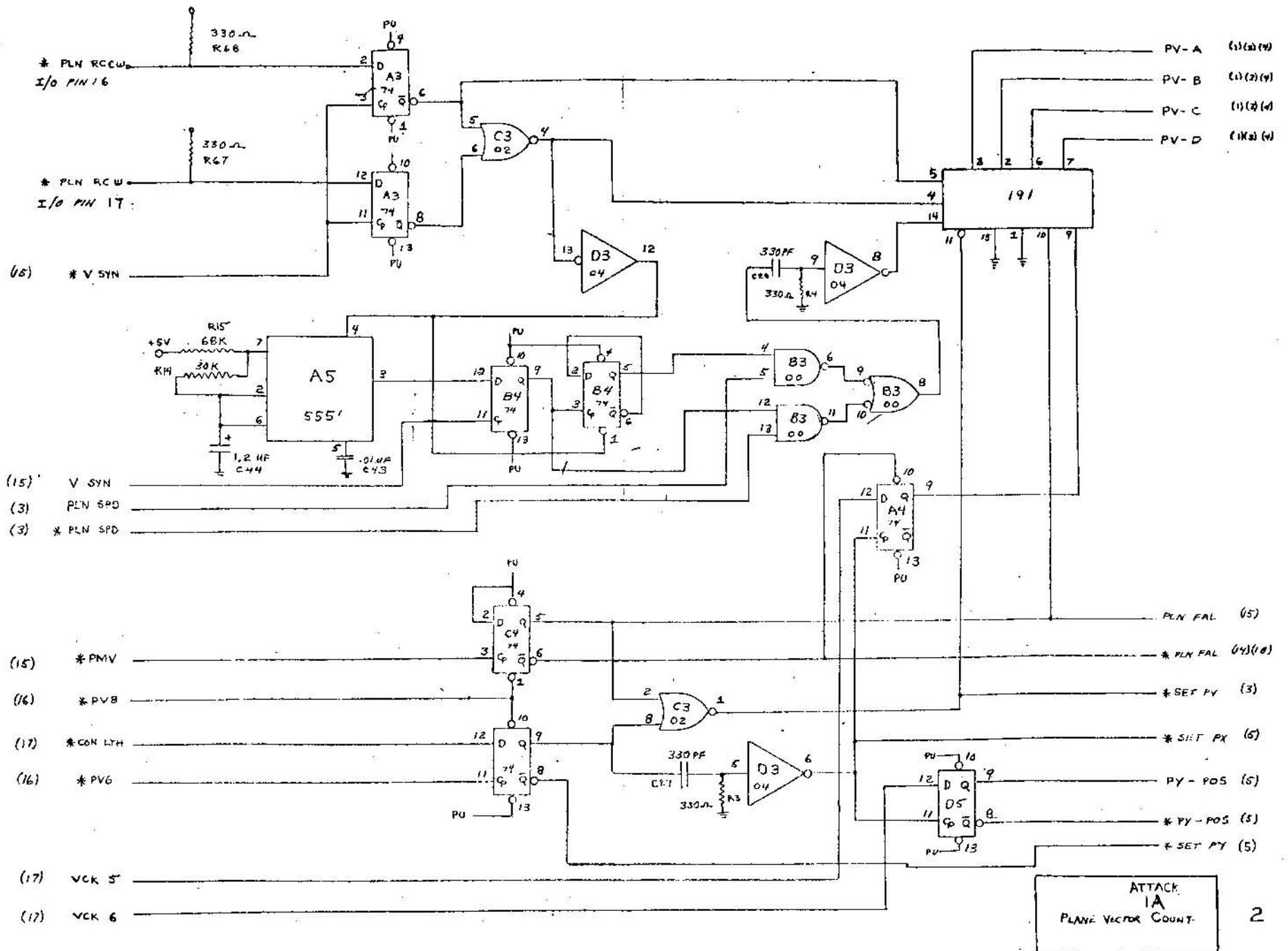
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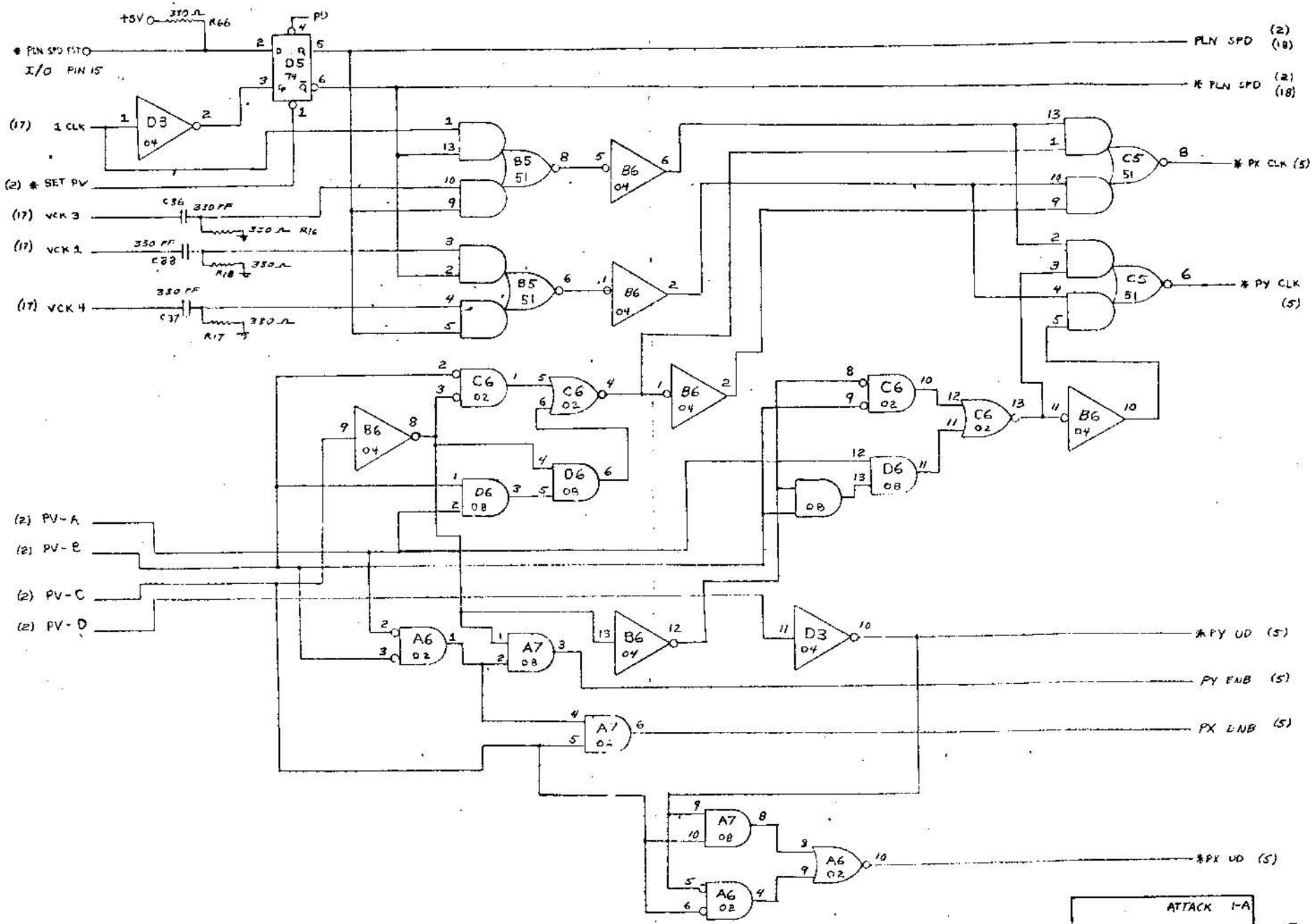
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LOGIC DIAGRAM 1A

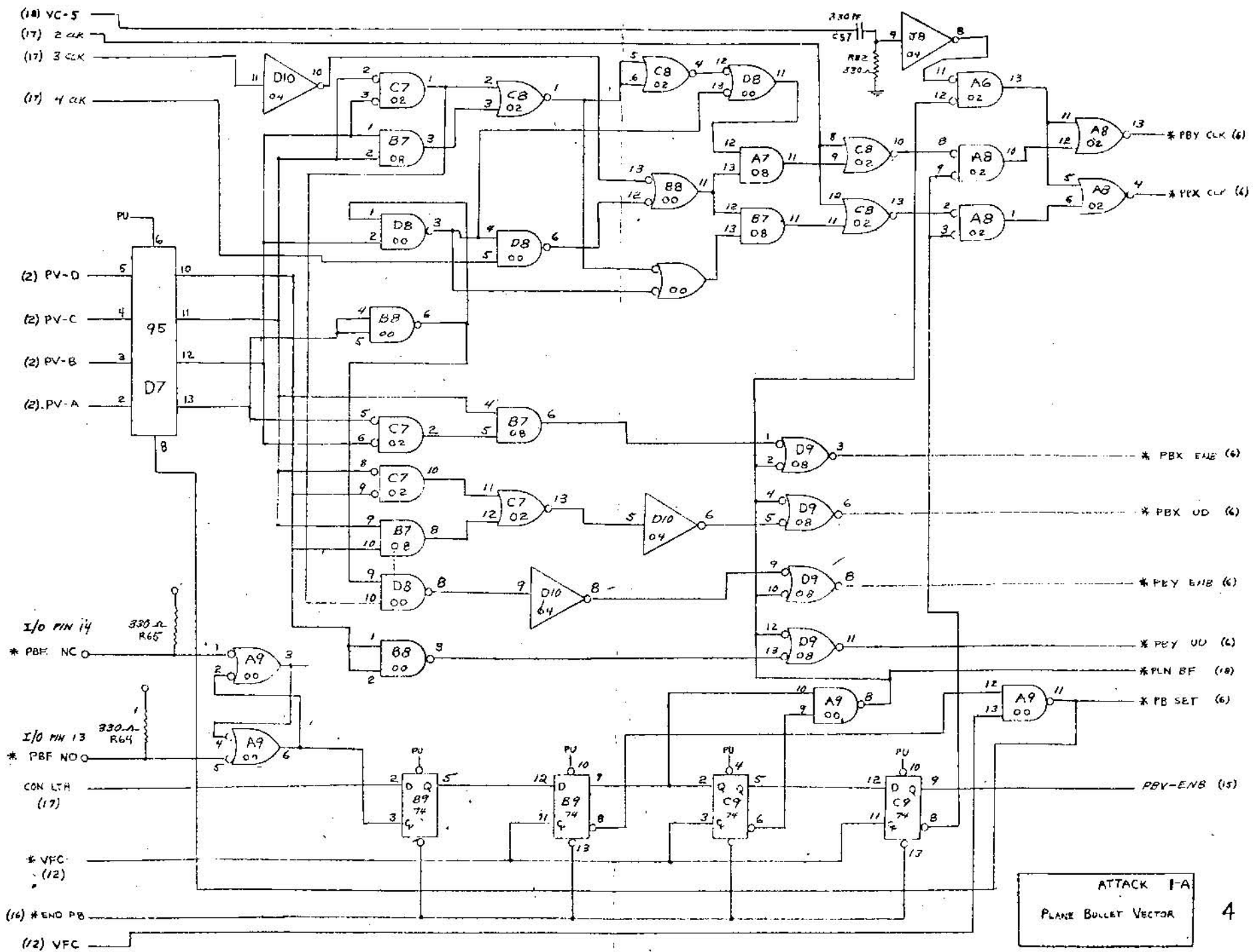


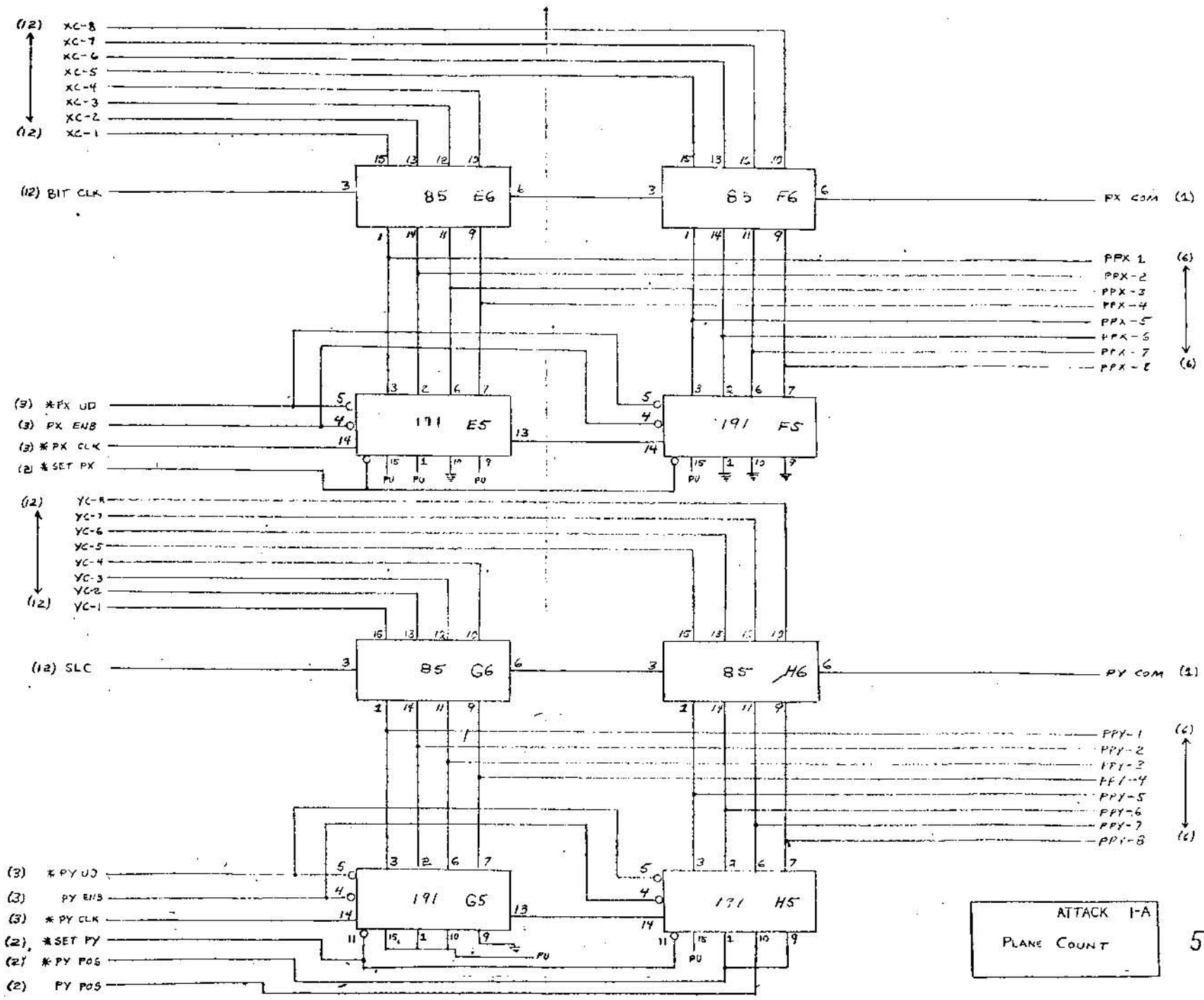
COMPONENT LOCATION
 1-A ATTACK

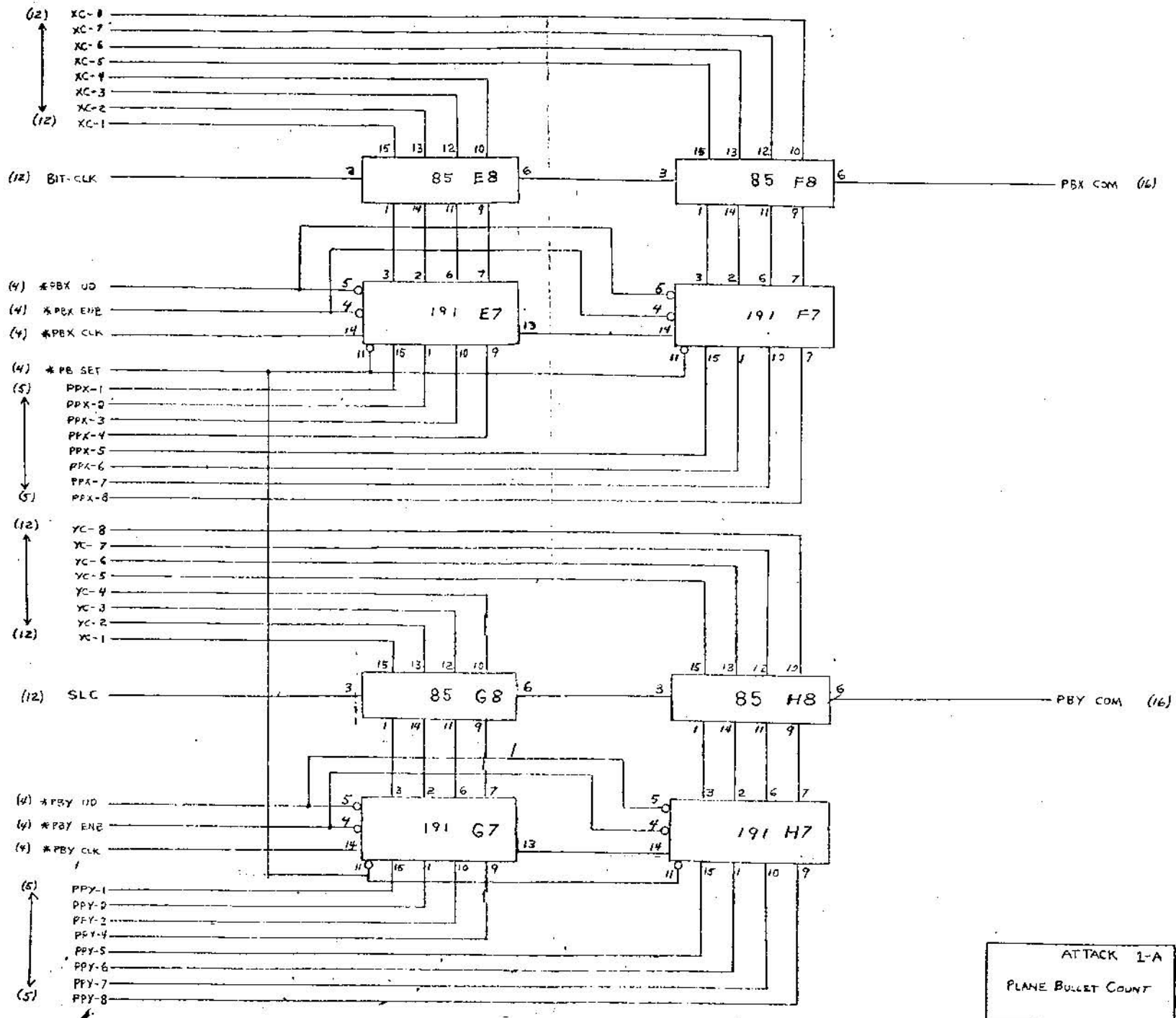




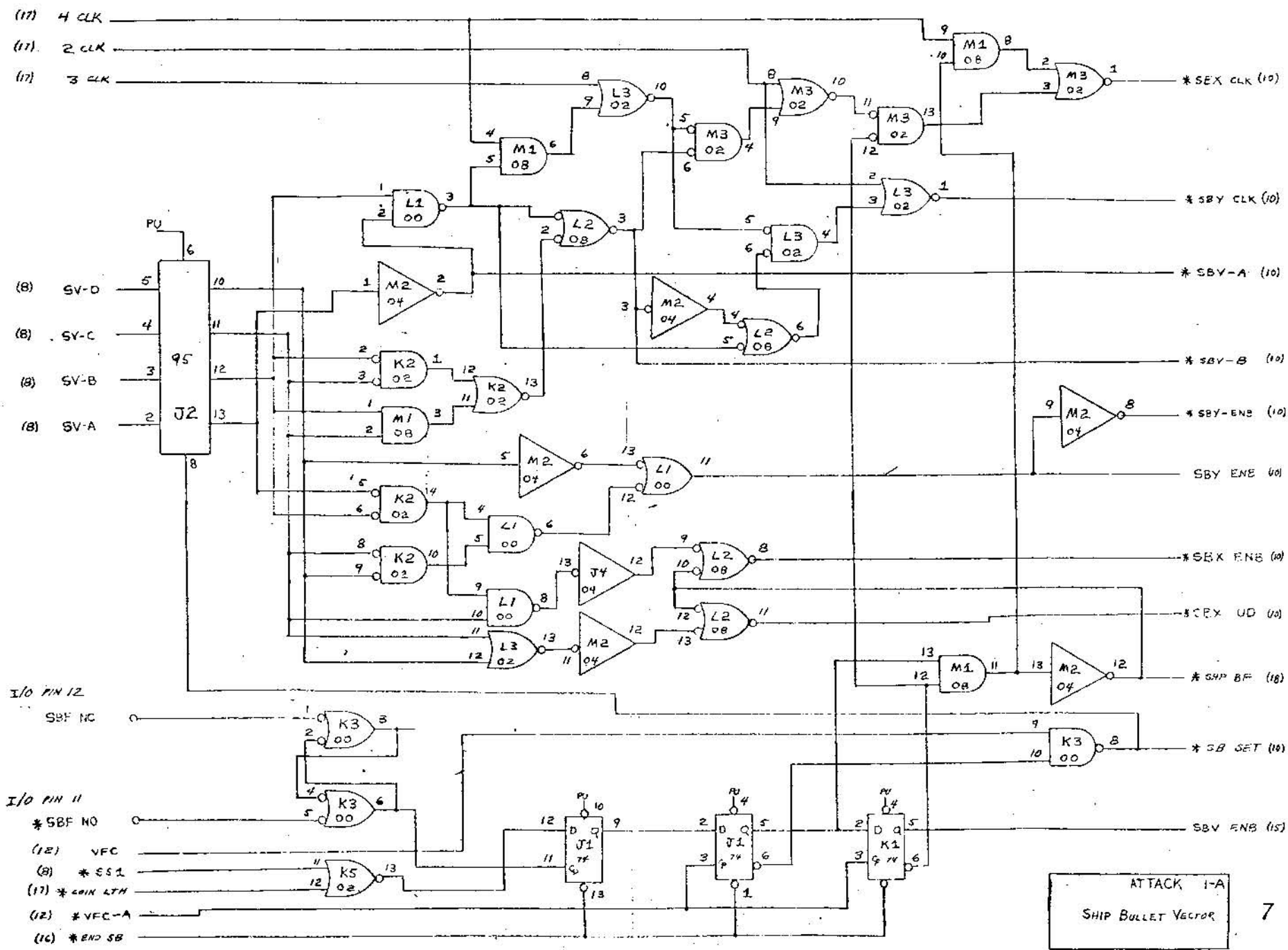
ATTACK 1-A
PLANE VECTOR CONTROL



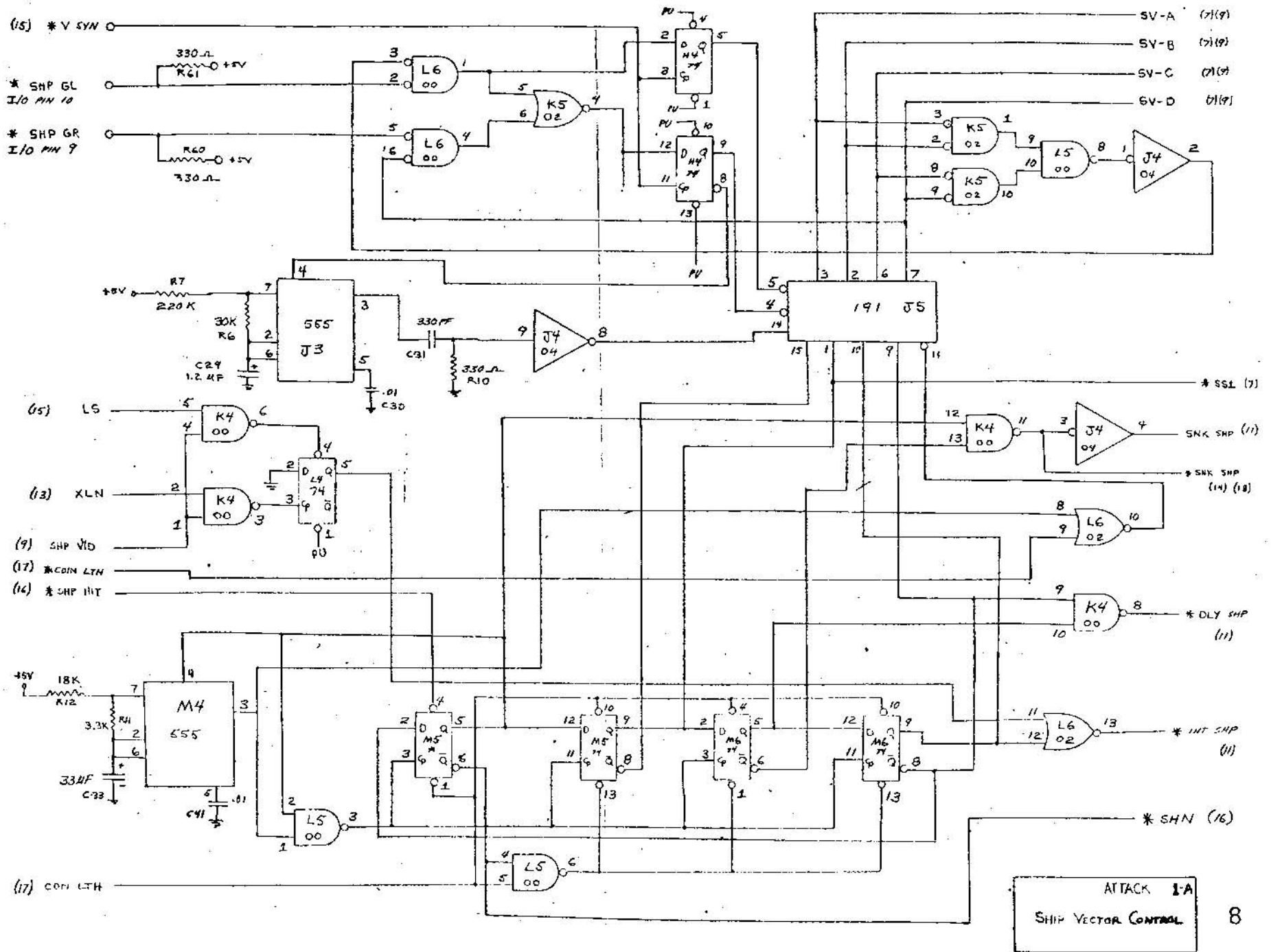


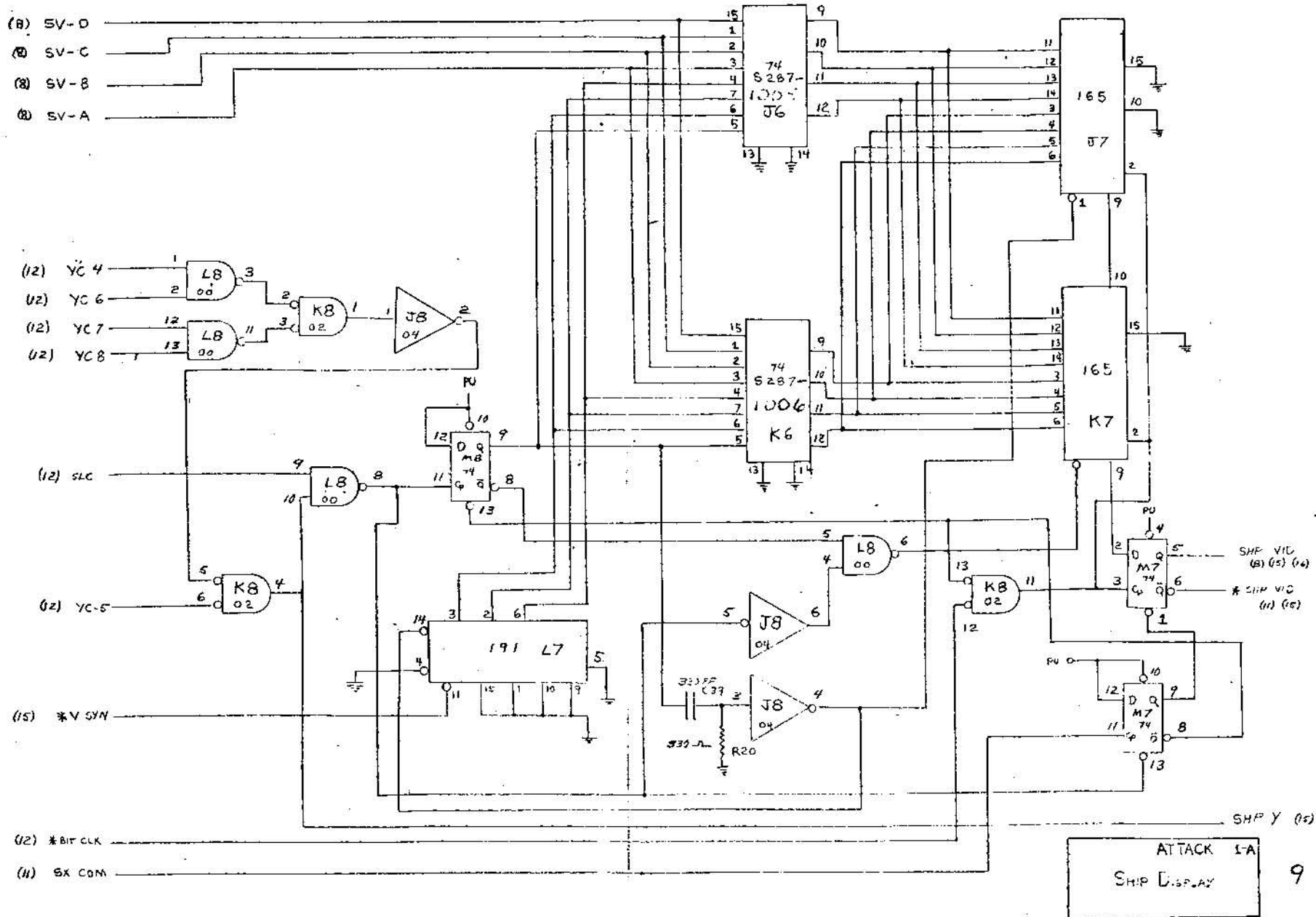


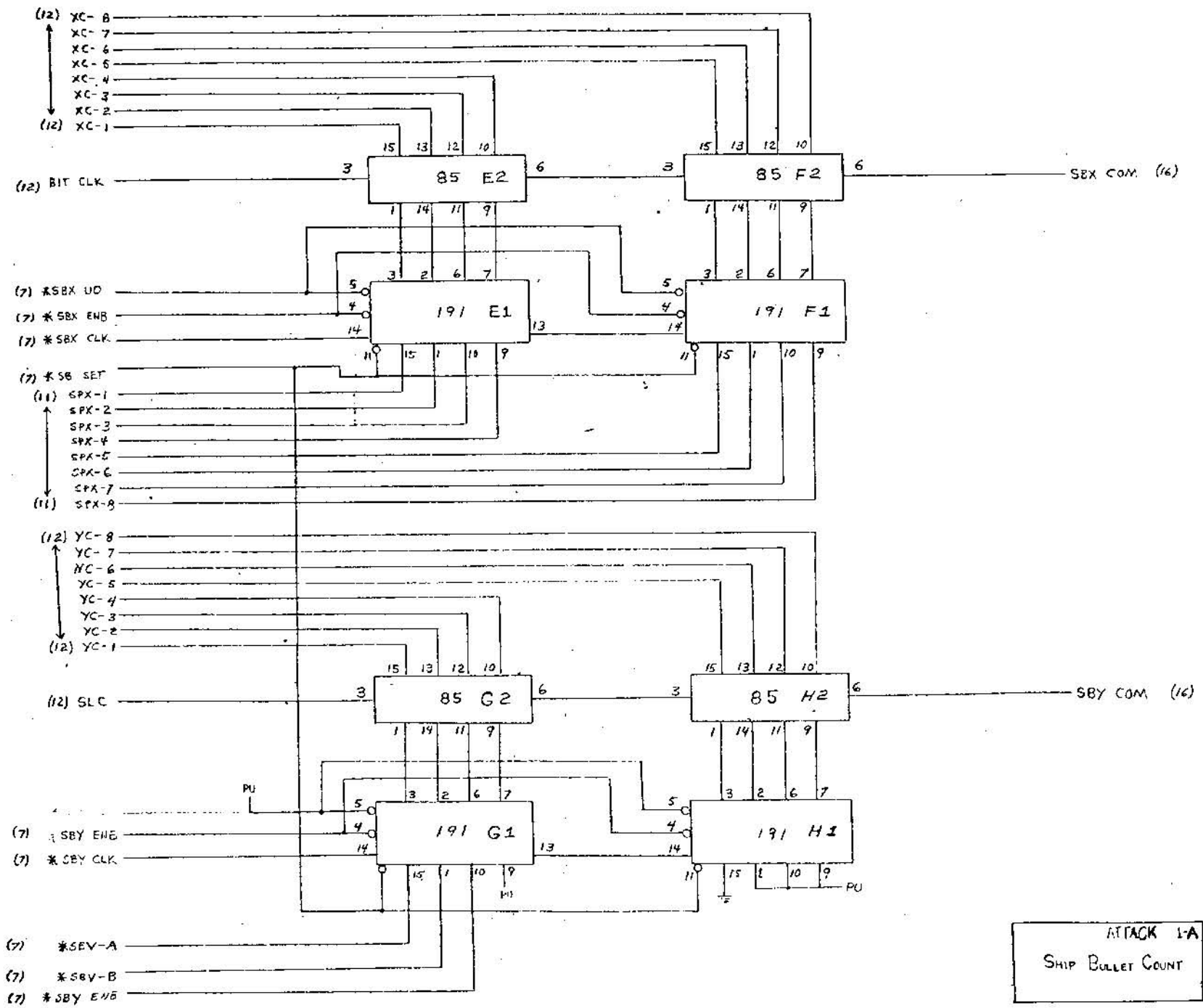
ATTACK 1-A
PLANE BULLET COUNT



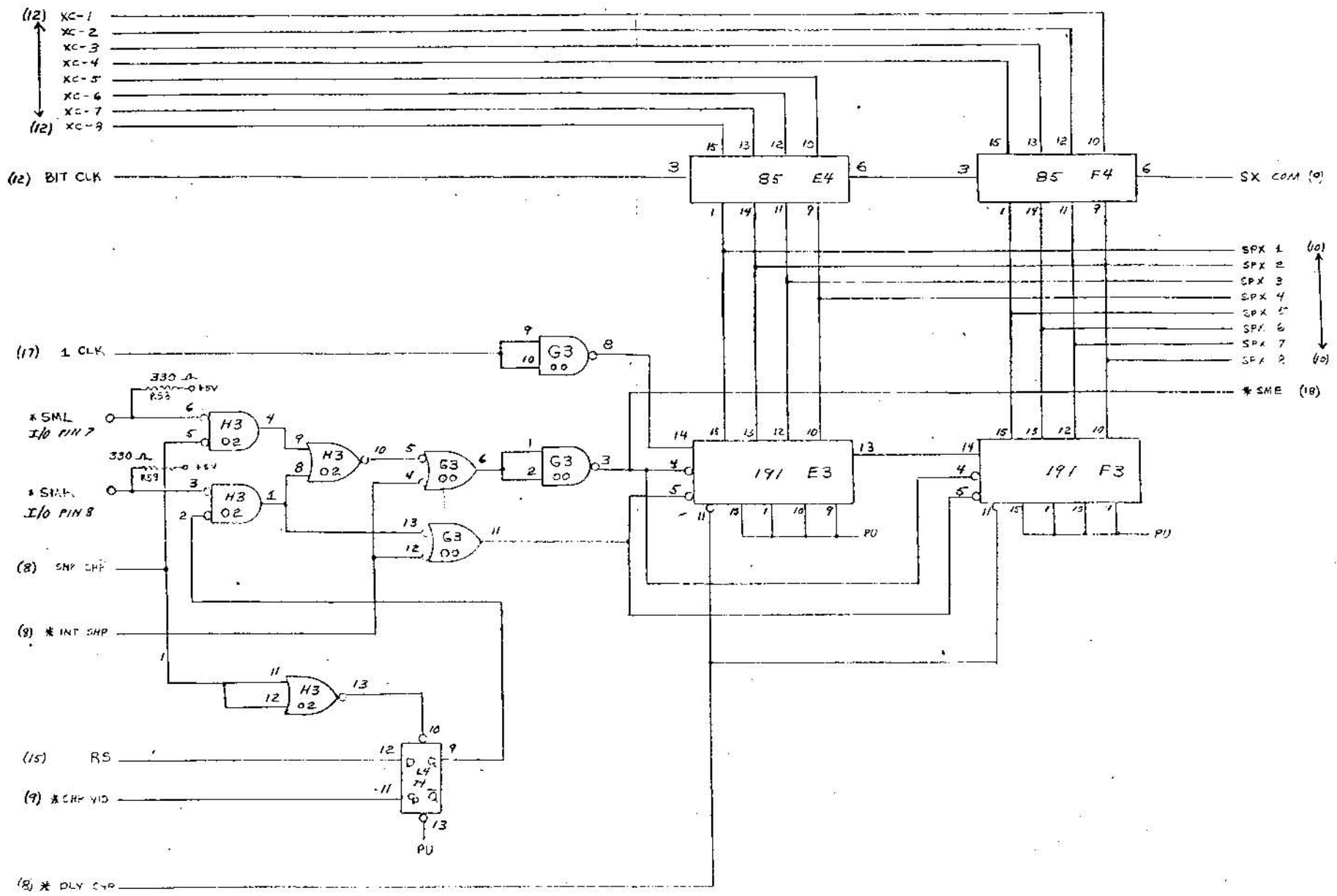
ATTACK 1-A
 SHIP BULLET VECTOR



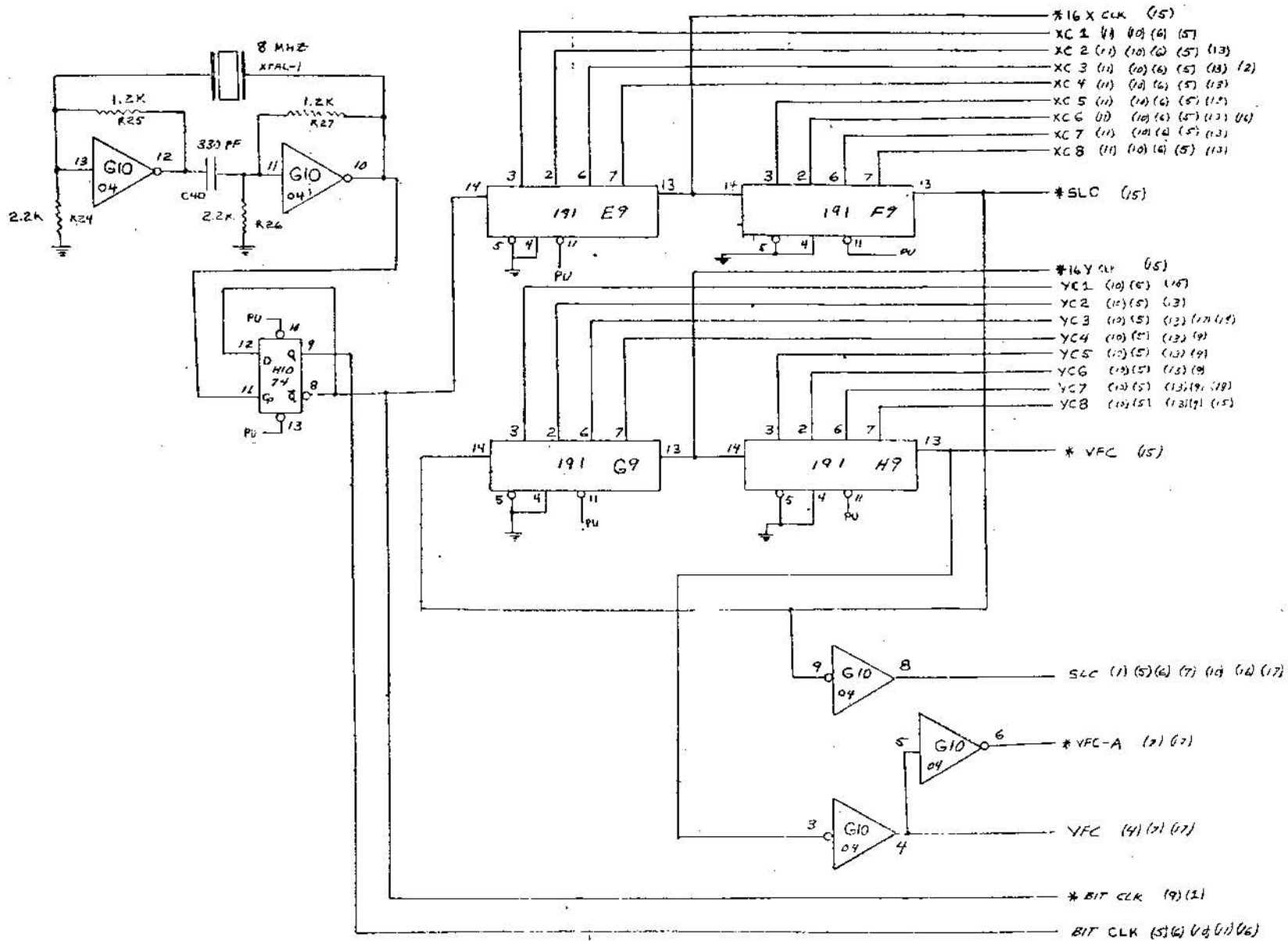




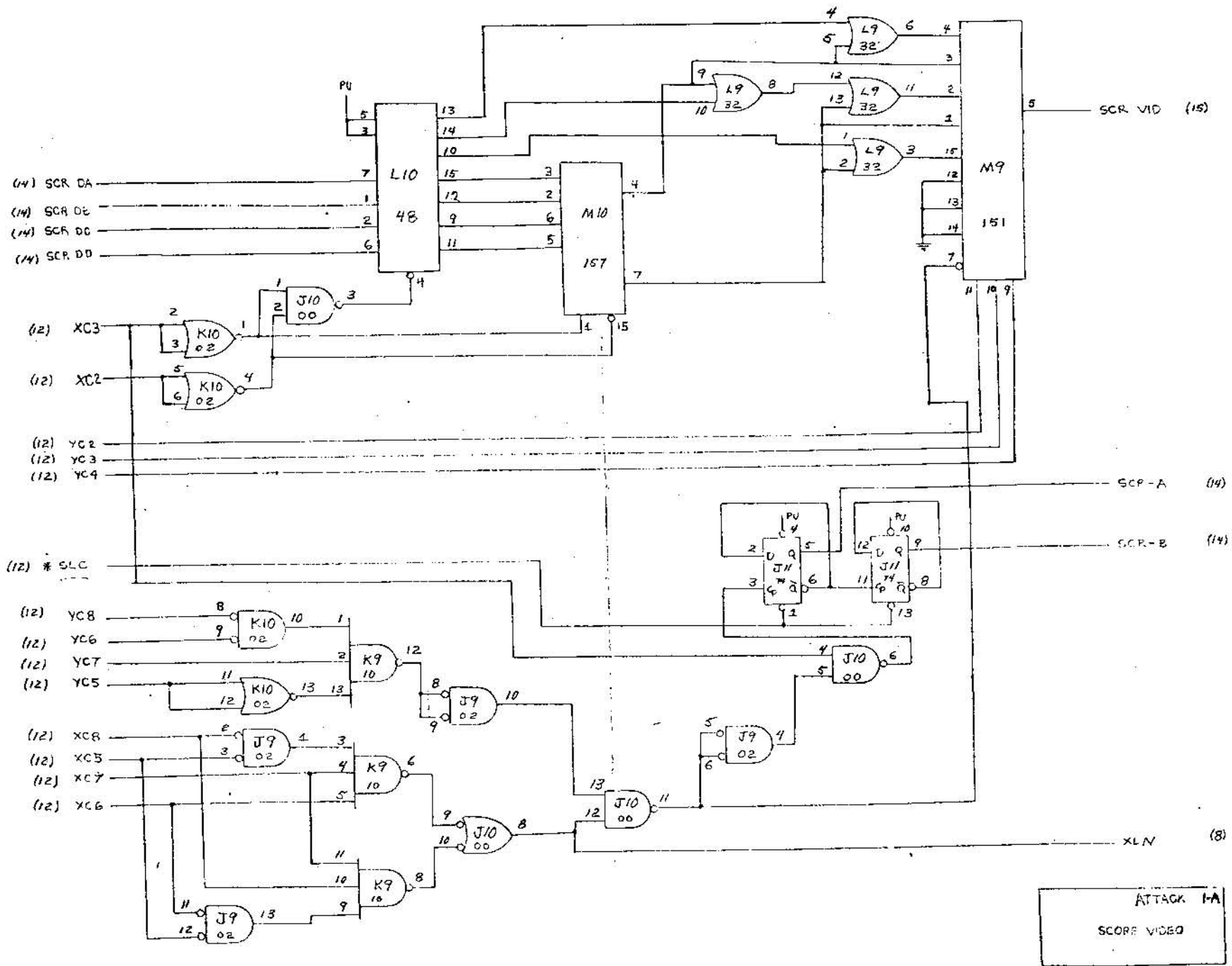
ATTACK 1-A
SHIP BULLET COUNT

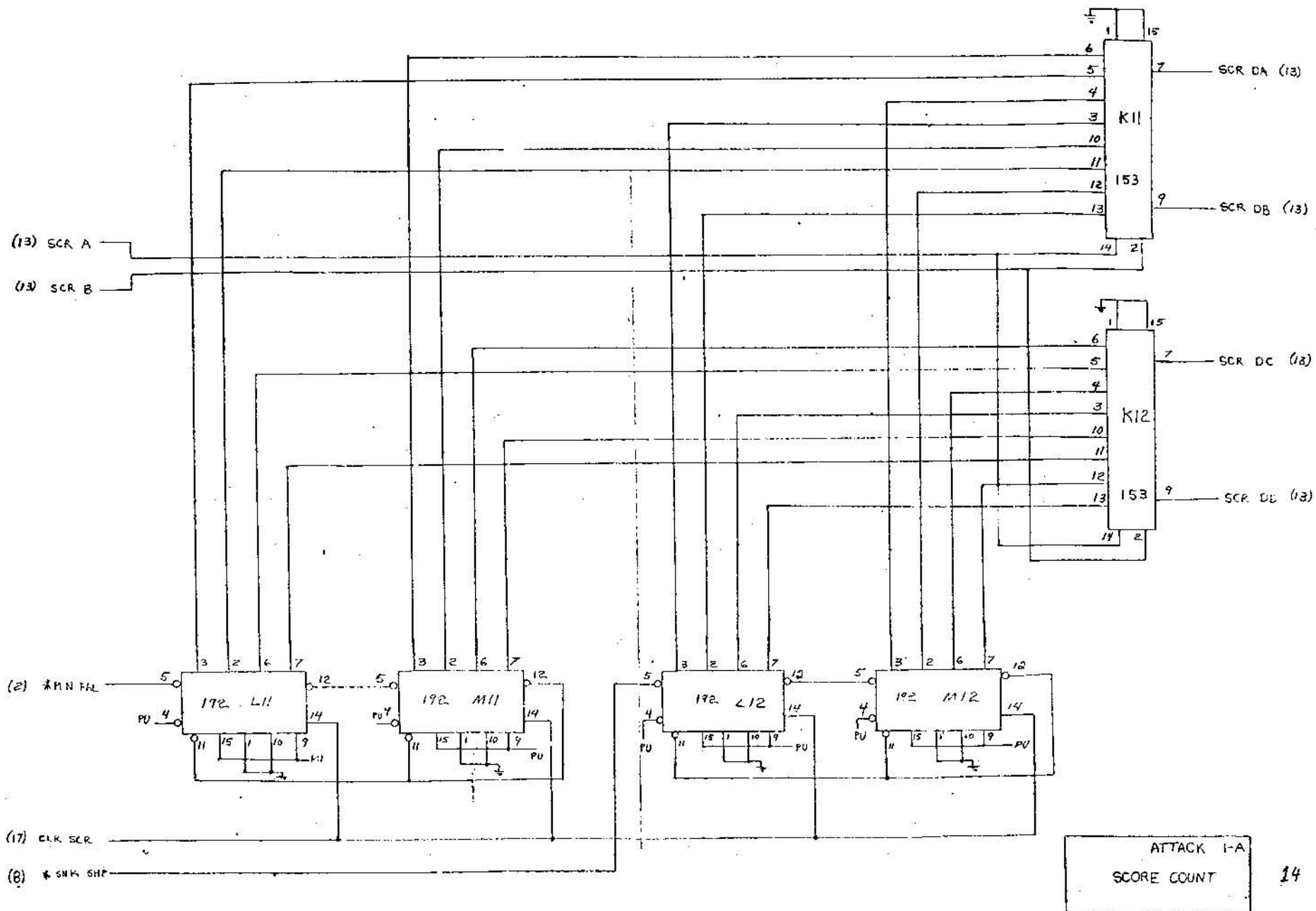


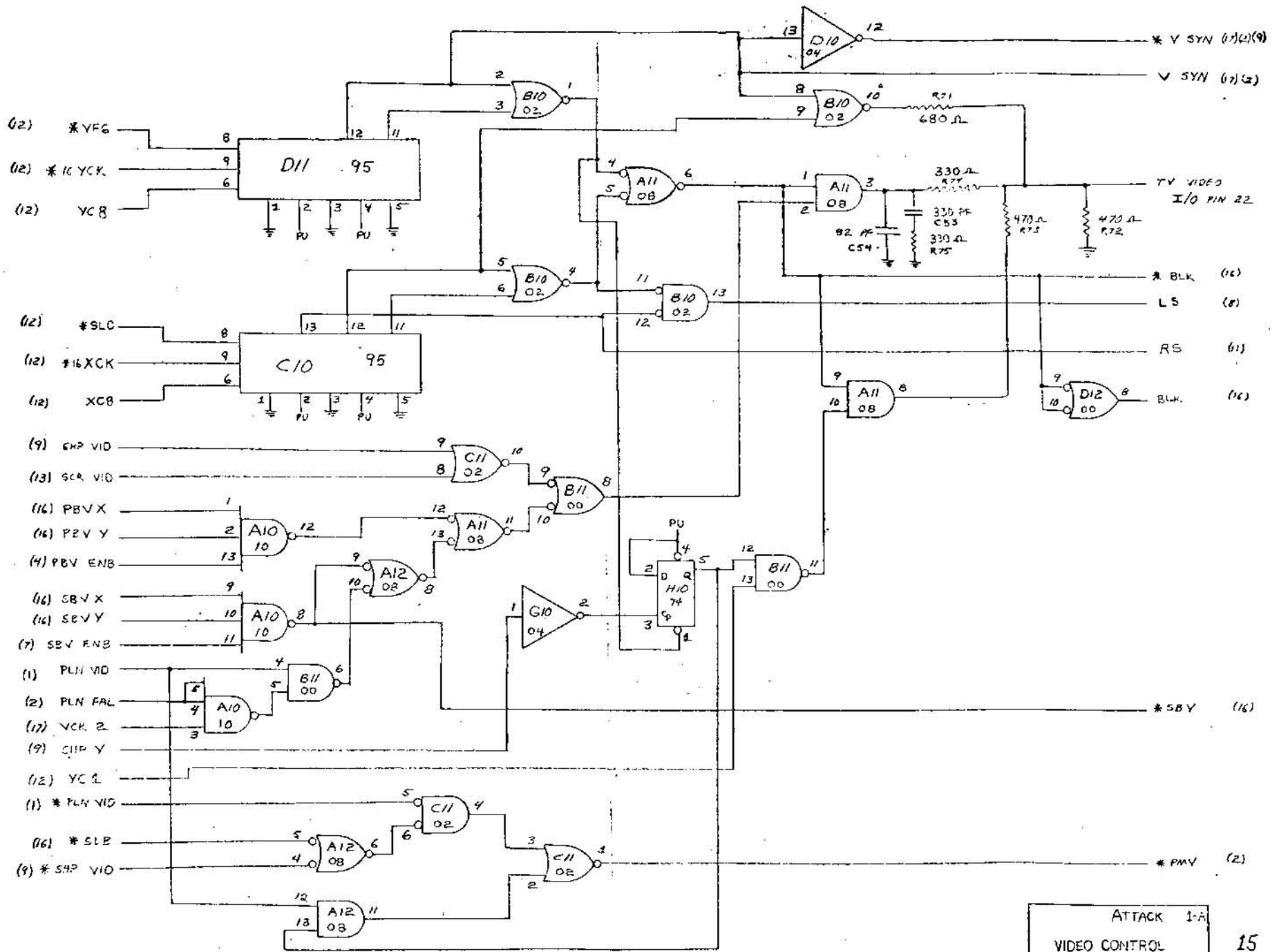
ATTACK 1-A
 SHIP X COUNT



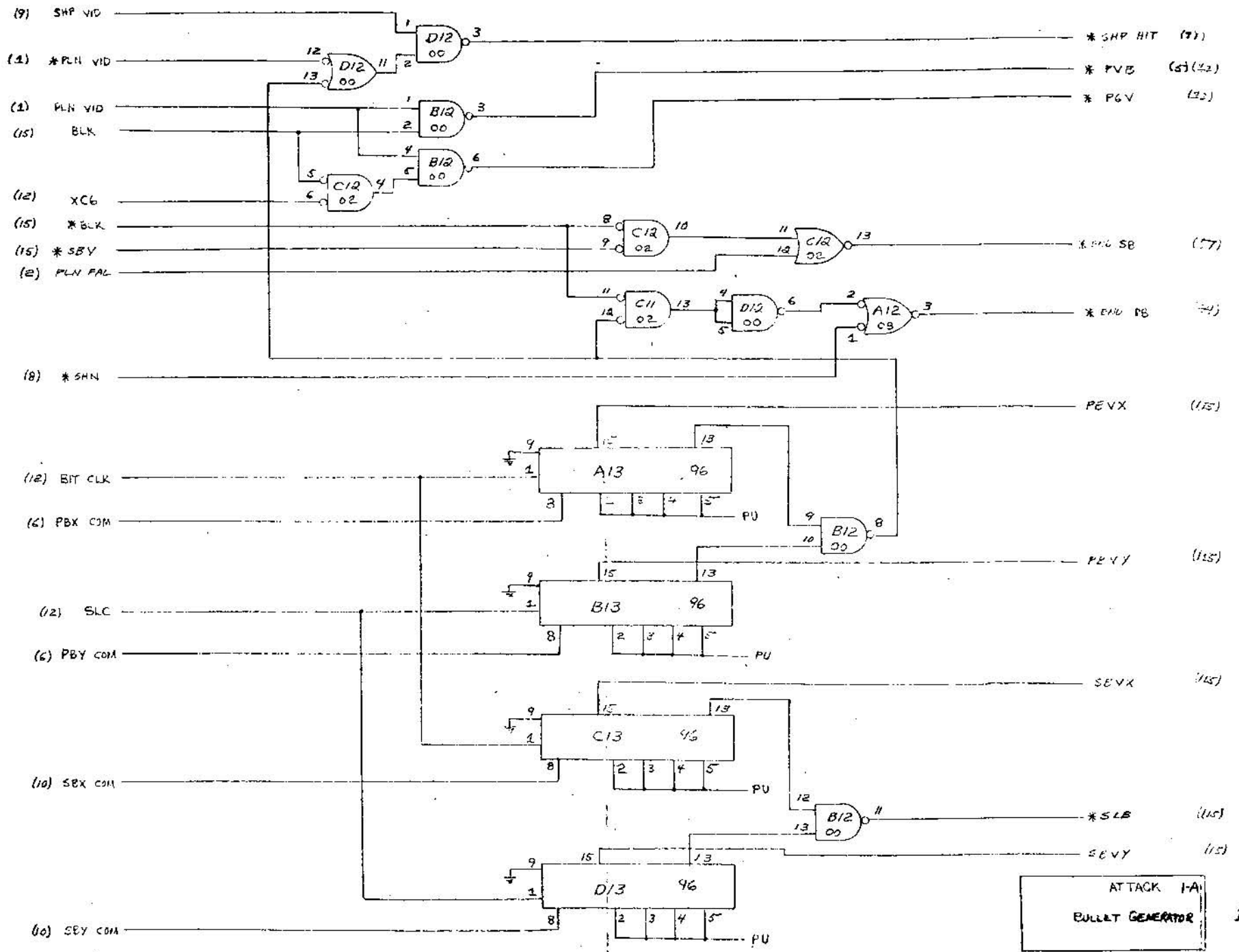
ATTACK 1-A
TIMING





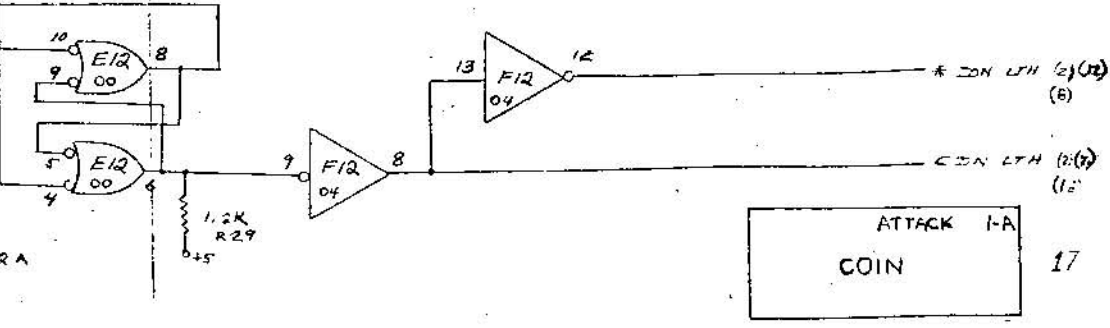
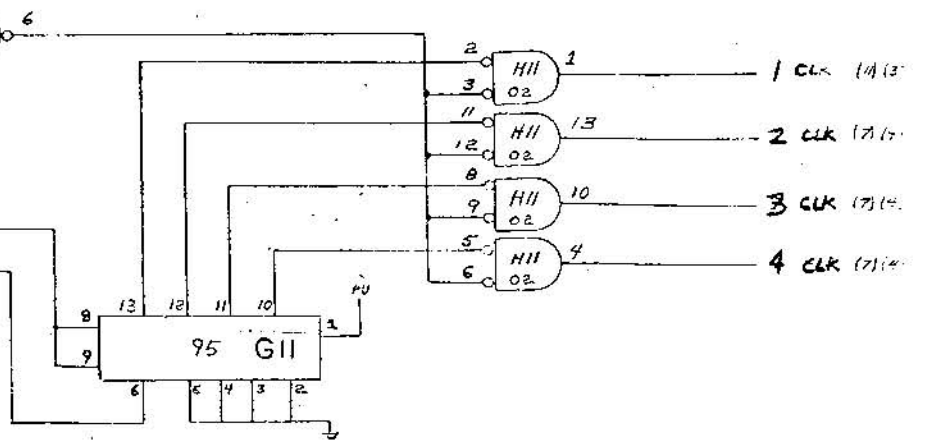
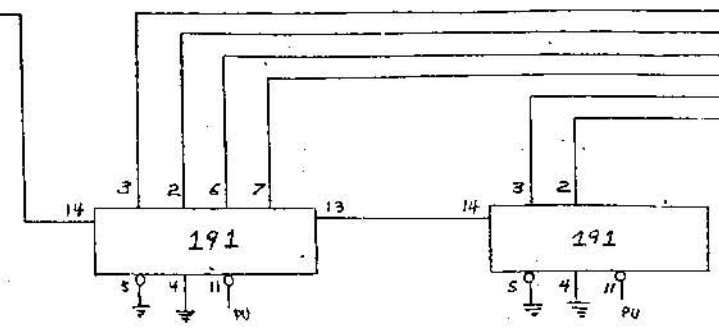
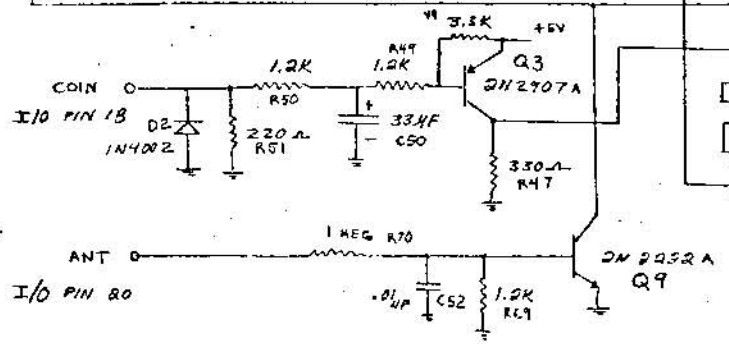
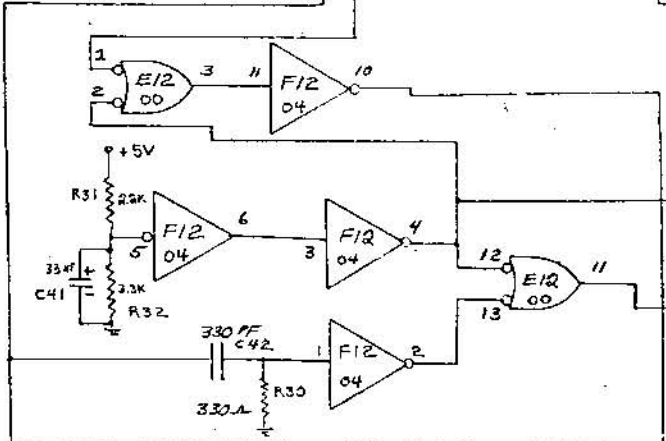
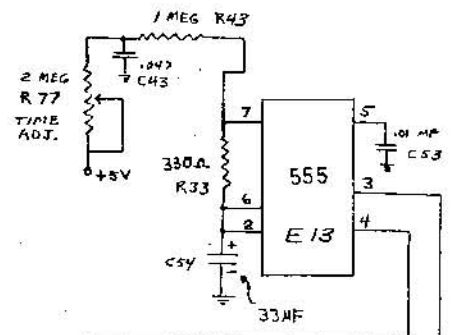


ATTACK 1-A
VIDEO CONTROL



(12) *YFC
 (11) SLC
 (10) V SYNC
 (9) *V SYNC

VCK 1 (8)
 VCK 2 (13) (10)
 VCK 3 (13) (10)
 VCK 4 (5) (11)
 VCK 5 (12) (4)
 VCK 6 (5) (2)



1 CLK (14) (13)
 2 CLK (7) (7)
 3 CLK (7) (14)
 4 CLK (7) (14)
 5 *OR (1)
 6 CLR SCR (14)
 7 CON LTH (2) (12)
 8 CON LTH (12) (12)
 17

(17) CON LTH

